

REMARKS

Claims 2-8, 15, 16 and 18-27 are pending in the present application. Claims 2, 3, 7 and 15 have been amended. Claims 4-6, 15, 16, 18-22 and 24-26 have been withdrawn from consideration as being non-elected claims.

Election of Species

In the Amendment dated December 23, 2005, Applicant requested examination of claims 15, 16 and 18 as readable on elected Species I – Fig. 5 of the present application. As asserted, although not necessarily limited thereto, the plurality of third electrodes of claim 15 “formed evenly spaced between the first electrode and the second electrode, wherein the third electrodes generate polarization”, may be interpreted as projection electrodes 132 as formed on bottom electrode 131 as illustrated in Fig. 5.

In the current Office Action dated March 24, 2006, the Examiner has failed to address Applicant’s request for examination of claims 15, 16 and 18 as readable on elected Species I – Fig. 5 of the present application. It would thus appear that this issue as raised by Applicant has not been considered.

Applicant again respectfully requests examination of claims 15, 16 and 18 as readable on elected Species I – Fig. 5 of the present application. **In the event that claims 15, 16 and 18 are deemed as not readable on elected Species I – Fig. 5, the Examiner is respectfully requested to explain why, so that the record with respect**

to prosecution of this application is clear.

Claim Rejections-35 U.S.C. 103

Claims 2, 3, 7, 8, 23 and 27 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Kato reference (U.S. Patent No. 6,284,595) in view of the Lu reference (U.S. Patent No. 5,679,596). This rejection, insofar as it may pertain to the presently pending claims, is traversed for the following reasons.

The ferroelectric capacitor of claim 2 features in combination a bottom electrode; a plurality of projection electrodes; a ferroelectric layer “formed on the bottom electrode and the projection electrodes”; and a top electrode, “wherein a thickness of the ferroelectric layer on the projection electrodes is less than a thickness of the ferroelectric layer on the bottom electrode, and wherein spacing between central portions of each projection electrode has a range from 10% to 20% of a size of the ferroelectric capacitor”. Applicant respectfully submits that the prior art as relied upon by the Examiner does not make obvious these features.

The Examiner has primarily relied upon Fig. 2 of the Kato reference, interpreting iridium layer 60 as the bottom electrode of claim 2, ruthenium layer 62 as the projection electrodes of claim 2 and capacitor insulator film 52 as the ferroelectric layer of claim 2. However, as may be readily understood in view of Fig. 2 of the Kato reference, capacitor insulator film 52 is a conformal layer and has uniform thickness. The structure in Fig. 2 of the Kato reference thus fails to disclose a thickness of a

ferroelectric layer on a projection electrode that is less than a thickness of a ferroelectric layer on a bottom electrode, as would be necessary to meet the features of claim 2. The Lu reference as secondarily relied upon does not overcome these deficiencies of the Kato reference. Applicant therefore respectfully submits that the ferroelectric capacitor of claim 2 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection, insofar as it may pertain to claims 2 and 8, is improper for at least these reasons.

The ferroelectric capacitor of claim 3 features in combination that "a thickness of the ferroelectric layer on the projection electrodes is less than a thickness of the ferroelectric layer on the bottom electrode, and wherein a size of each projection electrode has a range from 5% to 10% of a size of the ferroelectric capacitor".

Since capacitor insulator film 52 in Fig. 2 of the primarily relied upon Kato reference is conformal and has uniform thickness, the Kato reference clearly fails to disclose the above noted features of claim 3. The Lu reference as secondarily relied upon does not overcome the above noted deficiencies of the Kato reference. Applicant therefore respectfully submits that the ferroelectric capacitor of claim 3 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection, insofar as it may pertain to claims 3 and 23, is improper for at least these reasons.

The ferroelectric capacitor of claim 7 features in combination "a thickness of the ferroelectric layer on the projection electrodes is less than a thickness of the

ferroelectric layer on the bottom electrode, and wherein the projection electrodes are arranged evenly spaced on the bottom electrode".

As noted above, the relied upon prior art does not disclose or suggest a ferroelectric layer having the corresponding thicknesses as featured. Applicant therefore respectfully submits that the ferroelectric capacitor of claim 7 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection, insofar as it may pertain to claims 7 and 27, is improper for at least these reasons.

Claims 4-6, 20-22 and 24-26

As noted above, claims 4-6 as dependent upon claim 2, claims 20-22 as dependent upon claim 3, and claims 24-26 as dependent upon claim 7, have been withdrawn from consideration. However, respective independent claims 2, 3 and 7 should be allowable over the relied upon prior art for at least the reasons as set forth above. The Examiner is therefore respectfully requested to rejoin and examine withdrawn claims 4-6, 20-22 and 24-26, which should be allowable at least by virtue of dependency upon respective claims 2, 3 and 7.

Claims 15, 16, 18 and 19

As asserted previously, claims 15, 16 and 18 should be interpreted as readable on elected Species I – Fig. 5 of the present application. The Examiner is thus

respectfully requested to examine claims 15, 16 and 18.

The ferroelectric capacitor of claim 15 includes in combination a first electrode; a second electrode; a ferroelectric layer; and a plurality of third electrodes, wherein "a thickness of the ferroelectric layer on the third electrodes is less than a thickness of the ferroelectric layer on the second electrode".

Applicant respectfully submits that claim 15 would not have been obvious in view of the prior art for at least somewhat similar reasons as set forth above. That is, capacitor insulator film 52 in Fig. 2 of the Kato reference is conformal and has uniform thickness. The relied upon prior art thus fails to disclose or make obvious the ferroelectric thickness as featured in claim 15. Applicant therefore respectfully submits that claims 15, 16 and 18 should be allowable.

Applicant also respectfully submits that claim 19 should be allowable at least by virtue of dependency upon claim 15. The Examiner is thus respectfully requested to rejoin and allow claim 19.

Conclusion

The Examiner is respectfully requested to reconsider and withdraw the corresponding rejection, to rejoin and examine the claims as requested, and to pass all the claims of the present application to issue, for at least the above reasons.

In the event that there are any outstanding matters remaining in the present application, please contact Andrew J. Telesz, Jr. (Reg. No. 33,581) at (571) 283-0720

in the Washington, D.C. area, to discuss these matters.

Pursuant to the provisions of 37 C.F.R. 1.17 and 1.136(a), the Applicant hereby petitions for an extension of one (1) month to July 24, 2006, for the period in which to file a response to the outstanding Office Action. The required fee of \$120.00 should be charged to Deposit Account No. 50-0238.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment for any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-0238.

Respectfully submitted,

VOLENTINE FRANCOS & WHITT, P.L.L.C.



Andrew J. Telesz, Jr.
Registration No. 33,581

One Freedom Square
11951 Freedom Drive, Suite 1260
Reston, Virginia 20190
Telephone No.: (571) 283-0720
Facsimile No.: (571) 283-0740